

WO 00/63351

SEQUENCE LISTING

<110> INCYTE PHARMACEUTICALS, INC.

LAL, Preeti

YUE, Henry

TANG, Y. Tom

HILLMAN, Jennifer L.

BAUGHN, Mariah R.

YANG, Junming

<120> CARBOHYDRATE-MODIFYING ENZYMES

<130> PF-0687 PCT

<140> To Be Assigned

<141> Herewith

<150> 60/130,383

<151> 1999-04-21

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<170> PERL Program

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<212> PRT

<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 000422CD1

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35     40     45
Ala Ala Leu Ile Leu Ala Arg Gly Gly Ser Lys Gly Ile Pro Leu
50     55     60
Lys Asn Ile Lys His Leu Ala Gly Val Pro Leu Ile Gly Trp Val
65     70     75
Leu Arg Ala Ala Leu Asp Ser Gly Ala Phe Gln Ser Val Trp Val
80     85     90
Ser Thr Asp His Asp Glu Ile Glu Asn Val Ala Lys Gln Phe Gly
95     100    105
Ala Gln Val His Arg Arg Ser Ser Glu Val Ser Lys Asp Ser Ser
110    115    120
Thr Ser Leu Asp Ala Ile Ile Glu Phe Leu Asn Tyr His Asn Glu
125    130    135
Val Asp Ile Val Gly Asn Ile Gln Ala Thr Ser Pro Cys Leu His
140    145    150
Pro Thr Asp Leu Gln Lys Val Ala Glu Met Ile Arg Glu Glu Gly
155    160    165
Tyr Asp Ser Val Phe Ser Val Val Arg Arg His Gln Phe Arg Trp
170    175    180
Ser Glu Ile Gln Lys Gly Val Arg Glu Val Thr Glu Pro Leu Asn
185    190    195
Leu Asn Pro Ala Lys Arg Pro Arg Arg Gln Asp Trp Asp Gly Glu

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Leu Tyr Glu Asn Gly Ser Phe Tyr Phe	Ala Lys Arg His Leu Ile	
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Glu Met Gly Tyr Leu Gln Gly Gly Lys	Met Ala Tyr Tyr Glu Met	
230	235	240
Arg Ala Glu His Ser Val Asp Ile Asp	Val Asp Ile Asp Trp Pro	
245	250	255
Ile Ala Glu Gln Arg Val Leu Arg Tyr	Gly Tyr Phe Gly Lys Glu	
260	265	270
Lys Leu Lys Glu Ile Lys Leu Leu Val	Cys Asn Ile Asp Gly Cys	
275	280	285
Leu Thr Asn Gly His Ile Tyr Val Ser	Gly Asp Gln Lys Glu Ile	
290	295	300
Ile Ser Tyr Asp Val Lys Asp Ala Ile	Gly Ile Ser Leu Leu Lys	
305	310	315
Lys Ser Gly Ile Glu Val Arg Leu Ile	Ser Glu Arg Ala Cys Ser	
320	325	330
Lys Gln Thr Leu Ser Ser Leu Lys Leu	Asp Cys Lys Met Glu Val	
335	340	345
Ser Val Ser Asp Lys Leu Ala Val Val	Asp Glu Trp Arg Lys Glu	
350	355	360
Met Gly Leu Cys Trp Lys Glu Val Ala	Tyr Leu Gly Asn Glu Val	
365	370	375
Ser Asp Glu Glu Cys Leu Lys Arg Val	Gly Leu Ser Gly Ala Pro	
380	385	390
Ala Asp Ala Cys Ser Thr Ala Gln Lys	Ala Val Gly Tyr Ile Cys	
395	400	405
Lys Cys Asn Gly Gly Arg Gly Ala Ile	Arg Glu Phe Ala Glu His	
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<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 983984CD1

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Pro Leu Cys Leu Ala Thr Cys Leu Asp His	His Phe Pro Thr Gly
35	40 45
Ser Arg Pro Thr Val Pro Gly Pro Leu His	Phe Ser Gly Tyr Ser
50	55 60
Ser Val Pro Asp Gly Lys Pro Leu Val Arg	Glu Pro Cys Arg Ser
65	70 75
Cys Ala Val Val Ser Ser Ser Gly Gln Met	Leu Gly Ser Gly Leu
80	85 90
Gly Ala Glu Ile Asp Ser Ala Glu Cys Val	Phe Arg Met Asn Gln
95	100 105
Ala Pro Thr Val Gly Phe Glu Ala Asp Val	Gly Gln Arg Ser Thr
110	115 120
Leu Arg Val Val Ser His Thr Ser Val Pro	Leu Leu Leu Arg Asn
125	130 135
Tyr Ser His Tyr Phe Gln Lys Ala Arg Asp	Thr Leu Tyr Met Val

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Trp Gly Gln Gly	140	145	150
Arg His Met Asp Arg	155	160	165
Tyr Arg Thr Leu	170	175	180
Leu Gln Leu Thr Arg	185	190	195
Val Tyr Thr Phe	200	205	210
Thr Glu Arg Met Met	215	220	225
Phe Gln Asp Glu	230	235	240
Thr Gly Lys Asn Arg	245	250	255
Leu Ser Thr Gly	260	265	270
Trp Phe Thr Met Ile	275	280	285
Glu Glu Ile Val	290	295	300
Val Tyr Gly Met Val			
Glu Lys Ser His			
Pro Ser Val Pro Tyr			
Arg Leu Asp Glu			
Cys Gln Met Tyr Leu			
Arg Ser Ala His			
Arg Phe Ile Thr Glu			
Trp Ala Lys Lys			
Arg Pro Ile Val Phe			
Thr Glu			

<210> 3

<211> 578

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<213> Homo sapiens

<220>

<221> misc_feature

<223> Incyte ID No: 2210054CD1

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Ala Tyr Asp Ser Tyr	60	65	70	75
Arg Pro Leu Thr Cys	80	85	90	95
Leu Thr Leu Ile Asp	100	105	110	115
Val Ser Glu Phe Gln	120	125	130	135
Asp Phe Asp Ile Asp	140	145	150	155
Arg Val Val Gly Gly	160	165	170	175
Ala Gly Val Glu Val	180	185	190	195
Leu Arg Met Ala Glu	200	205	210	

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Ala	Asp	Gly	Lys	Gly	Pro	Cys	Val	Trp	Asp	Thr	Phe	Thr	His	Gln
				20					25					30
Gly	Gly	Glu	Arg	Val	Phe	Lys	Asn	Gln	Thr	Gly	Asp	Val	Ala	Cys
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Gly	Ser	Tyr	Thr	Leu	Trp	Glu	Glu	Asp	Leu	Lys	Cys	Ile	Lys	Gln
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Leu	Gly	Leu	Thr	His	Tyr	Arg	Phe	Ser	Leu	Ser	Trp	Ser	Arg	Leu
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Leu	Pro	Asp	Gly	Thr	Thr	Gly	Phe	Ile	Asn	Gln	Lys	Gly	Ile	Asp
				80					85					90
Tyr	Tyr	Asn	Lys	Ile	Ile	Asp	Asp	Leu	Leu	Lys	Asn	Gly	Val	Thr
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Pro	Ile	Val	Thr	Leu	Tyr	His	Phe	Asp	Leu	Pro	Gln	Thr	Leu	Glu
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Asp	Gln	Gly	Gly	Trp	Leu	Ser	Glu	Ala	Ile	Ile	Glu	Ser	Phe	Asp
				125					130					135
Lys	Tyr	Ala	Gln	Phe	Cys	Phe	Ser	Thr	Phe	Gly	Asp	Arg	Val	Lys
				140					145					150
Gln	Trp	Ile	Thr	Ile	Asn	Glu	Ala	Asn	Val	Leu	Ser	Val	Met	Ser
				155					160					165
Tyr	Asp	Leu	Gly	Met	Phe	Pro	Pro	Gly	Ile	Pro	His	Phe	Gly	Thr
				170					175					180
Gly	Gly	Tyr	Gln	Ala	Ala	His	Asn	Leu	Ile	Lys	Ala	His	Ala	Arg
				185					190					195
Ser	Trp	His	Ser	Tyr	Asp	Ser	Leu	Phe	Arg	Lys	Lys	Gln	Lys	Gly
				200					205					210
Met	Val	Ser	Leu	Ser	Leu	Phe	Ala	Val	Trp	Leu	Glu	Pro	Ala	Asp
				215					220					225
Pro	Asn	Ser	Val	Ser	Asp	Gln	Glu	Ala	Ala	Lys	Arg	Ala	Ile	Thr
				230					235					240
Phe	His	Leu	Asp	Leu	Phe	Ala	Lys	Pro	Ile	Phe	Ile	Asp	Gly	Asp
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Tyr	Pro	Glu	Val	Val	Lys	Ser	Gln	Ile	Ala	Ser	Met	Ser	Gln	Lys
				260					265					270
Gln	Gly	Tyr	Pro	Ser	Ser	Arg	Leu	Pro	Glu	Phe	Thr	Glu	Glu	Glu
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Lys	Lys	Met	Ile	Lys	Gly	Thr	Ala	Asp	Phe	Phe	Ala	Val	Gln	Tyr
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Tyr	Thr	Thr	Arg	Leu	Ile	Lys	Tyr	Gln	Glu	Asn	Lys	Lys	Gly	Glu
				305					310					315
Leu	Gly	Ile	Leu	Gln	Asp	Ala	Glu	Ile	Glu	Phe	Phe	Pro	Asp	Pro
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Ser	Trp	Lys	Asn	Val	Asp	Trp	Ile	Tyr	Val	Val	Pro	Trp	Gly	Val
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Cys	Lys	Leu	Leu	Lys	Tyr	Ile	Lys	Asp	Thr	Tyr	Asn	Asn	Pro	Val
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Ile	Tyr	Ile	Thr	Glu	Asn	Gly	Phe	Pro	Gln	Ser	Asp	Pro	Ala	Pro
				365					370					375
Leu	Asp	Asp	Thr	Gln	Arg	Trp	Glu	Tyr	Phe	Arg	Gln	Thr	Phe	Gln
				380					385					390
Glu	Leu	Phe	Lys	Ala	Ile	Gln	Leu	Asp	Lys	Val	Asn	Leu	Gln	Val
				395					400					405
Tyr	Cys	Ala	Trp	Ser	Leu	Leu	Asp	Asn	Phe	Glu	Trp	Asn	Gln	Gly
				410					415					420
Tyr	Ser	Ser	Arg	Phe	Gly	Leu	Phe	His	Val	Asp	Phe	Glu	Asp	Pro
				425					430					435
Ala	Arg	Pro	Arg	Val	Pro	Tyr	Thr	Ser	Ala	Lys	Glu	Tyr	Ala	Lys
				440					445					450
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 <213> Homo sapiens

<220>
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 <223> Incyte ID No: 2912330CD1

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 35 40 45
 Leu Val Gln Arg Gly His Glu Val Thr Val Leu Ala Ser Ser Ala
 50 55 60
 Ser Ile Ser Phe Asp Pro Asn Ser Pro Ser Thr Leu Lys Phe Glu
 65 70 75
 Val Tyr Pro Val Ser Leu Thr Lys Thr Glu Phe Glu Asp Ile Ile
 80 85 90
 Lys Gln Leu Val Lys Arg Trp Ala Glu Leu Pro Lys Asp Thr Phe
 95 100 105
 Trp Ser Tyr Phe Ser Gln Val Gln Glu Ile Met Trp Thr Phe Asn
 110 115 120
 Asp Ile Leu Arg Lys Phe Cys Lys Asp Ile Val Ser Asn Lys Lys
 125 130 135
 Leu Met Lys Lys Leu Gln Glu Ser Arg Phe Asp Val Val Leu Ala
 140 145 150
 Asp Ala Val Phe Pro Phe Gly Glu Leu Leu Ala Glu Leu Leu Lys
 155 160 165
 Ile Pro Phe Val Tyr Ser Leu Arg Phe Ser Pro Gly Tyr Ala Ile
 170 175 180
 Glu Lys His Ser Gly Gly Leu Leu Phe Pro Pro Ser Tyr Val Pro
 185 190 195
 Val Val Met Ser Glu Leu Ser Asp Gln Met Thr Phe Ile Glu Arg
 200 205 210
 Val Lys Asn Met Ile Tyr Val Leu Tyr Phe Glu Phe Trp Phe Gln
 215 220 225
 Ile Phe Asp Met Lys Lys Trp Asp Gln Phe Tyr Ser Glu Val Leu
 230 235 240
 Gly Arg Pro Thr Thr Leu Ser Glu Thr Met Ala Lys Ala Asp Ile
 245 250 255
 Trp Leu Ile Arg Asn Tyr Trp Asp Phe Gln Phe Pro His Pro Leu
 260 265 270
 Leu Pro Asn Val Glu Phe Val Gly Gly Leu His Cys Lys Pro Ala
 275 280 285
 Lys Pro Leu Pro Lys Glu Met Glu Glu Phe Val Gln Ser Ser Gly
 290 295 300
 Glu Asn Gly Val Val Val Phe Ser Leu Gly Ser Met Val Ser Asn
 305 310 315
 Thr Ser Glu Glu Arg Ala Asn Val Ile Ala Ser Ala Leu Ala Lys
 320 325 330
 Ile Pro Gln Lys Val Leu Trp Arg Phe Asp Gly Asn Lys Pro Asp
 335 340 345
 Thr Leu Gly Leu Asn Thr Arg Leu Tyr Lys Trp Ile Pro Gln Asn
 350 355 360
 Asp Leu Leu Gly His Pro Lys Thr Lys Ala Phe Ile Thr His Gly
 365 370 375
 Gly Met Asn Gly Ile Tyr Glu Ala Ile Tyr His Gly Val Pro Met

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Val Gly Val Pro Ile Phe Gly Asp Gln Leu Asp Asn Ile Ala His					
	395		400		405
Met Lys Ala Lys Gly Ala Ala Val Glu Ile Asn Phe Lys Thr Met					
	410		415		420
Thr Ser Glu Asp Leu Leu Arg Ala Leu Arg Thr Val Ile Thr Asp					
	425		430		435
Ser Ser Tyr Lys Glu Asn Ala Met Arg Leu Ser Arg Ile His His					
	440		445		450
Asp Gln Pro Val Lys Pro Leu Asp Arg Ala Val Phe Trp Ile Glu					
	455		460		465
Phe Val Met Arg His Lys Gly Ala Lys His Leu Arg Ser Ala Ala					
	470		475		480
His Asp Leu Thr Trp Phe Gln His Tyr Ser Ile Asp Val Ile Gly					
	485		490		495
Phe Leu Leu Thr Cys Val Ala Thr Ala Ile Phe Leu Phe Thr Lys					
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Glu Lys Arg Glu					

<210> 6

<211> 1772

<212> DNA

<213> Homo sapiens

<220>

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<223> Incyte ID No: 000422CB1

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cctaattctg	gcccggggag	gcagcaaaag	catccccctg	agaacatta	agcacctggc	300
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 <223> a or g or c or t, unknown, or other

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gaattctaca	acattcctca	gggatacaca	gtggagaagc	gagagggcta	cccacttcgg	1200
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ccaggaacac	tcttctcacc	agaaaaccat	gaccaggcaa	gggagaggaa	gcctgccaaa	1740
cagaaggtcc	cacttctcag	ctgccccagt	cagcccttca	cctccaagtt	ggcattactg	1800
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